User Installation Manual

MULTSESS/HPO

Version 2.0

MVS Operating Environment

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PassGo

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Changes will be made periodically to the information contained in this book. If your book does not accurately reflect the level of product you are using, this may be due to a fix being applied to the product which has still to be released as a book update.

Preface

Prerequisites for running MULTSESS/HPO

MULTSESS/HPO has been designed to run under the latest releases of MVS, MVS/XA and MVS/ESA running ACF/VTAM V3.3 and earlier, in both SNA and NON-SNA environments.

Devices supported by MULTSESS/HPO

- all models of 317x, 318x, 319x and 327x (or their equivalents), utilising the maximum available screen display area
- the 3290 Information Panel with each interactive panel in 3270 mode
- LUTYPE 1 printers (SNA printers with the SCS feature)
- devices attached through NTO
- IBM 3767 and compatible devices

Application sessions using MULTSESS/HPO are supported in the terminal's native mode.

Terminal to MULTSESS/HPO sessions are supported in model 2 mode.

About the User Installation Manual

This User Installation Manual is for use by technical personnel who are going to install and customize MULTSESS/HPO.

The contents of this manual should be consulted before installation.

Throughout this manual references to INSTGDE should be taken as referring to the MULTSESS/HPO Installation Guide.

Related publications

The MULTSESS/HPO User Reference Manual contains details of commands that the user may enter at the terminal and error messages that may be issued to the terminal.

The MULTSESS/HPO User Reference Manual should be read in conjunction with this manual when performing installation tasks such as defining command sequences in the user profile dataset, and may be used as a stand-alone reference work by terminal users.

The MULTSESS/HPO Technical Reference Manual describes how to use MULTSESS/HPO in your environment.

The MULTSESS/HPO Customization Reference Manual describes ways of customizing MULTSESS/HPO to suit your own requirements and your system environment.

Future publication changes

Changes will be made periodically to MULTSESS/HPO publications to reflect new releases and facilities. When this occurs you will be supplied with update pages or a new updated manual.

Reader's comment form

A form for the reader's comments is provided at the back of this manual.

Any information supplied may be used or distributed by the authors in any manner considered appropriate without incurring any obligation whatsoever.

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Section 1 - for new users of MULTSESS/HPO

1. Reviewing the distribution material

MULTSESS/HPO is distributed on magnetic tape with a standard IBM label. The contents of the tape are described in the *Installation Guide* that accompanies the tape.

Installation Guide and other manuals
Accompanying the tape is an *Installation Guide* detailing the JCL required to load the tape, a *User Reference Manual* describing MULTSESS/HPO commands and terminal messages, a *Technical Reference Manual* giving background information on the major concepts and features of MULTSESS/HPO, this manual, the *User Installation Manual* and the *Customization Reference Manual* providing guidance on customizing MULTSESS/HPO to suit your requirements and your environment. If you have not received any of this material, you should contact your local support office before beginning installation.

Note: You are strongly recommended to read ***all*** the distributed documentation before starting to install MULTSESS/HPO.

2. Loading the distribution libraries

The jobstream to load the distribution tape is described in the *Installation Guide* that accompanies the tape.

3. Defining MULTSESS/HPO to VTAM

The following VTAM changes are required:

- Copy the MULTSESS/HPO logmode table to SYS1.VTAMLIB.
- Identify MULTSESS/HPO as an application to VTAM.
- Define virtual terminals to VTAM.
- Define virtual terminals to your applications.
- Enable ACB sharing for applications not requiring the use of virtual terminals.
- Define MULTSESS/HPO to other domains.

The required changes are described in detail in *Chapter 2 - VTAM updates*

4. Defining your applications to MULTSESS/HPO

MULTSESS/HPO users can establish sessions only with those applications for which they are authorized and which have been defined in the Application Definition Table (ADT).

Adding entries to the ADT is described in *Chapter 3 - Defining applications to MULTSESS/HPO*

5. Defining your users to MULTSESS/HPO

Users are defined in the MULTSESS/HPO Directory of Users. A sample directory is supplied with a set of userids used by the installation verification procedure to demonstrate some of the major features of MULTSESS/HPO.

You will want to add definitions for your own users. This is described in *Chapter 4 - Defining users to MULTSESS/HPO*

6. Create user profiles

Profiles are 'command lists' that may be executed on demand or automatically at logon time. The definition and use of profiles is discussed in *Chapter 3 - Profiles* in the Technical Reference Manual.

7. Startup options

Review the available startup options, described in *Chapter 5 - Pre-startup and startup options.*

Member MSOPTION of the control library contains a set of sample options suitable for initial testing. Before starting MULTSESS/HPO you must update this member to include the product authorization code supplied by your local support office and the ACBNAME specified on the VTAM definition for MULTSESS/HPO.

8. Review performance considerations

Review the performance considerations and guidelines discussed in the section entitled *Performance considerations* on page 1.10.

9. Review customization options

MULTSESS/HPO includes a number of optional features and customization options, as described in the Customization Reference Manual; for example:

- Customizing MULTSESS/HPO messages
- Customizing the MULTSESS/HPO logo
- Terminal logon feature
- Direct application connection
- User panel mode
- Defining virtual terminal pools
- Security of ATP scripts

10. Create the JCL required to run MULTSESS/HPO

Sample JCL to run MULTSESS/HPO is supplied in member MSJCL of the control library. Refer to the section entitled *JCL to run MULTSESS/HPO* on page 1.7.

Edit the JCL to match the dataset names used to load the distribution libraries and to meet your installation standards.

Copy the updated JCL member to a suitable procedure library.

11. Security system considerations

MULTSESS/HPO includes interfaces for user verification by the major proprietary security packages. The following points should be actioned as appropriate:

RACF - MULTSESS/HPO steplib library must be an authorized library or defined in the program properties table.

ACF2 - MULTSESS/HPO must be defined as a MUSASS logonid. The logonid should be the name of the JCL procedure created in step 10.

TOPS - The MULTSESS/HPO module that issues RACINIT, TPSUBT, must be defined in the CA-TOP Secret Systems Facility Matrix. For example:
Facility (USER3=NAME=MULTXXX)
Facility (MULTXXX=PGM=TPS,NOABEND,NOSUBM,NOLAB,AUTHINIT)
Facility (MULTXXX=MRO,MULTIUSER,NORNDPW,TENV,NOTSOC)
Facility (MULTXXX=NOXDEF,ACTIVE)

SAC - ALERT/SAC users should code the SAC-PRTY and SAC-CLASS MULTSESS/HPO startup parameters with appropriate values.

12. Initialize MULTSESS/HPO

Activate the VTAM major node containing the definition of MULTSESS/HPO and its virtual terminals:

V NET,ACT,ID=*membername*

where:

membername is the name of the member of SYS1.VTAMLST containing the MULTSESS/HPO definitions.

Start MULTSESS/HPO by issuing the MVS command:

S *procname*

where:

procname is the name of the procedure library member created in step 10.

13. Installation verification procedure

Logon to MULTSESS/HPO using the normal VTAM commands used at your installation.

Chapter 8 - Installation verification describes steps you should follow to verify that MULTSESS/HPO has been correctly installed and to demonstrate some of the major features of the product.

Section 2 - for existing users of MULTSESS/HPO

1. Reviewing the distribution material

MULTSESS/HPO is distributed on magnetic tape with a standard IBM label. The contents of the tape are described in the *Installation Guide* that accompanies the tape.

Installation Guide and other manuals
Accompanying the tape is an *Installation Guide* detailing the JCL required to load the tape, a *User Reference Manual* describing MULTSESS/HPO commands and terminal messages, a *Technical Reference Manual* giving background information on the major concepts and features of MULTSESS/HPO, this manual, the *User Installation Manual* and the *Customization Reference Manual* providing guidance on customizing MULTSESS/HPO to suit your requirements and your environment. If you have not received any of these materials, you should contact your local support office before beginning installation.

Note: You are strongly recommended to read ***all*** the distributed documentation before starting to install MULTSESS/HPO.

2. Loading the distribution libraries

The jobstream to load the distribution tape is described in the *Installation Guide* that accompanies the tape.

3. Startup options

Review the available startup options described in *Chapter 5 - Pre-startup and startup options*. Startup options that are new to MULTSESS/HPO Version 2.0 are listed below. Those options that were previously supplied as fixes are identified with the fix number at the end of the option details.

Terminal monitor support with NETSPY
New startup option NETSPY=YES/NO. If YES is specified, terminal monitor support with NETSPY is provided.

Using terminal name as userid
New startup option AUTO-LOGON=YES/NO. If YES is specified, this startup option will cause the user to be logged on to MULTSESS/HPO using the terminal name as the userid. This facility was previously supplied as fix number MSF0614.

Returning users to logo
New startup option LOGOFF=LOGO. If specified, this will return users to the MULTSESS logo at logoff and not to VTAM.

Reconnecting on a different terminal type with sessions active
New startup option RECONNECT-DIFFERENT-TERMTYPE=YES/NO. This startup option solves the problem of not being allowed to reconnect on a different terminal type with sessions active (refer to recommendations on the use of this parameter in *Chapter 5 - Pre-startup and startup options*). This facility was previously supplied as fix number MSF0613.

Providing a menu when a session is terminated with round-robin in effect and the MSKEY set

New startup option ROUND-ROBIN-SESSEND=MENU. This startup option solves the problem of MULTSESS/HPO not sending a menu when a session is terminated with round-robin in effect and the MSKEY set. This facility was previously supplied as fix number MSF0604.

Issuing a logoff on termination of the last session when round robin is in effect and MSKEY is set

New startup option ROUND-ROBIN-LOGOFF=YES/NO. This startup option solves the problem of MULTSESS/HPO stacking a logoff on termination of the last session when round-robin is in effect and the MSKEY set. It is active with YES specified. This facility was previously supplied as fix number MSF0603.

Setting the ATTN key as the MENU key

New startup option ATTN-MENU-KEY=YES/NO. If YES is specified, this startup option will cause the ATTN key to be treated as the MENU key. This allows ATTN to be sent to the session if pressed twice. This facility was previously supplied as fix number MSF0608.

Placing the user into DISCONNECT status when a terminal is powered off

New startup option POWER-OFF-DISCONNECT=YES/NO. If YES is specified, this startup option will cause MULTSESS/HPO to put the user into DISCONNECT status when a terminal is powered off. This facility was previously supplied as fix number MSF0600.

Searching for a session switch character in the first character position of all modified fields

New startup option SEARCH-ALL=YES/NO. If YES is specified, this startup option will cause MULTSESS/HPO to look for a session switch character in the first character position of all modified fields, instead of just the first. This facility was previously supplied as fix number MSF0601.

4. Installation verification procedure

Logon to MULTSESS/HPO using the normal VTAM commands used at your installation.

Chapter 8 - Installation verification describes steps you should follow to verify that MULTSESS/HPO has been correctly installed and to demonstrate some of the major features of the product.

Section 3 - general information

Problem determination

Starting MULTSESS/HPO for the first time
After starting MULTSESS/HPO for the first time, the message:

'TPINIT MULTSESS INITIALIZATION COMPLETE'

should be displayed on the MVS console within a few seconds. If this message does not appear, or if you cannot subsequently logon to MULTSESS/HPO, check the MVS console and the MULTSESS/HPO CONSOLE DD file for explanatory messages.

Early problems
Some of the more common reasons for early problems are discussed below:

Missing or mistyped DD names.

If unable to open any of the mandatory datasets at startup time, MULTSESS/HPO will abnormally terminate.

Mistyped or syntax error in table definitions.

If MULTSESS/HPO detects a syntax error in any of its tables, diagnostic messages and the statement images in error will be written to the CONSOLE DD file. MULTSESS/HPO will abnormally terminate.

The message 'WAITING FOR ACB *xxxxxxxx*' appears on the system operator console.

MULTSESS/HPO is unable to open the ACB named on the ACBNAME= startup parameter. The named ACB does exist but is either not active or is in use by another application. Activate the major node containing the MULTSESS/HPO VTAM definitions using the command:

V NET,ACT,ID=majnode

or alternatively make the ACB available.

An ABEND 205 occurs.

Check the CONSOLE DD file for messages indicating the cause of the error. A common error is the misspelling of a startup parameter or a statement in a table. Check the syntax of all MULTSESS/HPO parameters and statements and your SYS1.VTAMLST definitions.

If MULTSESS/HPO successfully initializes and the message 'MULTSESS INITIALIZATION COMPLETE' appears on the operator's console but you are unable to connect to MULTSESS/HPO from your terminal, the probable cause is that the logmode used cannot be matched in the MULTSESS/HPO logmode table. Review the Technical Reference Manual, *Chapter 5 - MULTSESS/HPO use of logmodes* and the supplied MULTSESS/HPO logmode table.

To correct the problem, do one of the following:

use a different terminal with a different default logmode, or log on specifying a logmode from the IBM default table ISTINCLM, for example:

LOGON APPLID(MULTSESS/HPO) LOGMODE(D4C32782)

Refer to the MULTSESS/HPO console DD file. There will be a message detailing the logmode used by the terminal. Add a matching entry to the MULTSESS/HPO logmode table as described in the Technical Reference Manual, *Chapter 5 - MULTSESS/HPO use of logmodes*, in the section entitled *Updating logmode entries* on page 5.8.

Distribution tape format

MULTSESS/HPO distribution
The distribution tape format is described in the *Installation Guide* that accompanies the tape.

JCL to run MULTSESS/HPO

Sample JCL
Sample JCL to run MULTSESS/HPO is supplied in member MSJCL of the control library loaded from the distribution tape. You should edit this member to specify the *PREFIX* used to unload the tape. The pre-startup options as coded on the EXEC statement should be reviewed.

NCI/XF Starter System
Users of the NCI/XF Starter System may wish to amend the NEWS DD statement to share the NCI hot news dataset.

Startup time
If unable to open its ACB at startup time, MULTSESS/HPO will, in circumstances where the ACB is likely to become active, wait for ACB activation. This enables the MULTSESS/HPO started task to be automatically started at IPL time by including a 'START MULTSESS' command in SYS1.PARMLIB member COMMND*nn* or JES2PARM. MULTSESS/HPO will attempt to open its ACB every 15 seconds until VTAM and the ACB become active.

Dataset usage

This section describes the datasets used by MULTSESS/HPO during normal running. All files are optional unless otherwise stated.

Available files

MULTSESS/HPO USER DIRECTORY *THIS FILE IS MANDATORY*
A member of a partitioned dataset, pointed to by the DIRECT DD statement, containing the directory of users and/or terminals authorized to access MULTSESS/HPO. The dataset must be fixed length with a record length of 80 and must not contain sequence numbers. If the file cannot be opened at startup time, MULTSESS/HPO will terminate and an information message will be written to the CONSOLE DD file.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO loads this file into storage at startup time in a compressed internal format. The file may be updated and the new version brought into use while MULTSESS/HPO is active using the DIRECT command.

APPLICATION DEFINITION TABLE *THIS FILE IS MANDATORY*
A member of a partitioned dataset, pointed to by the APPLIDS DD statement, describing the applications with which MULTSESS/HPO is to communicate on behalf of users.

The dataset must be fixed length with a record length of 80 and must not contain sequence numbers. If the file cannot be opened at startup time, MULTSESS/HPO will terminate and an information message will be written to the CONSOLE DD file.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO loads this file into storage at startup time in a compressed internal format. The file may be updated and the new version brought into use while MULTSESS/HPO is active using the DEFINE command.

VIRTUAL TERMINAL POOL DEFINITIONS

A member of a partitioned dataset, pointed to by the VPOOL DD statement, containing definitions of the virtual terminal pools, the ACBNAMEs included in each pool and the logmodes to be associated with the ACBs.

This file is optional. If not specified, a warning message will be issued and the virtual terminal pool feature will be disabled. The dataset must be fixed length with a record length of 80 without sequence numbers.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO loads this file into storage at startup time in a compressed internal format.

The file may be updated and the new version brought into use while MULTSESS/HPO is active using the VPOOL command.

ATP/HPO CONTROL TABLE

A member of a partitioned dataset, pointed to by the ATPDIR DD statement, which controls access to ATP scripts held in either the public or private ATP script libraries.

This file is optional. If not specified and a connection to ATP has been requested by the ATP-NODENAME startup parameter, MULTSESS/HPO will issue a warning message and continue normal operation. However, only the main (public) ATP script library will be available and any user will be able to invoke any script on any of his sessions.

The dataset must be fixed length with a record length of 80 and must not contain sequence numbers.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO loads this file into storage at startup time in a compressed internal format.

The file may be updated and the new version brought into use while MULTSESS/HPO is active using the ATPDIR command.

USER LOGO DATASET

A member of a partitioned dataset, pointed to by the LOGO DD statement, defining the image to be displayed on all terminals as they connect to MULTSESS/HPO.

This file is optional. If not specified, MULTSESS/HPO will use the default logo defined in load module TPLOG.

The dataset must be fixed length with a record length of 80 and must not contain sequence numbers.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO loads this file into storage at startup time in a compressed internal format.

The file may be updated and the new version brought into use while MULTSESS/HPO is active using the LLOAD command.

USER DEFINED MENU PANELS

A member of a partitioned dataset, pointed to by the PANELS DD statement, containing installation defined menu panels.

This file is optional. If not specified, only the MULTSESS/HPO dynamic panel will be available. The dataset must be fixed length with a record length of 80 without sequence numbers.

This file contains plain-language statements. No assemblies or other preprocessing are required to maintain this dataset. To avoid unnecessary file I/O, MULTSESS/HPO will load this file into storage at startup time in a compressed internal format.

The file may be updated and the new version brought into use while MULTSESS/HPO is active using the PLOAD command.

STARTUP OPTIONS *THIS FILE IS MANDATORY*

A member of a partitioned dataset, pointed to by the STARTUP DD statement, containing options to override MULTSESS/HPO global defaults and to pass MULTSESS/HPO your product authorization code.

The dataset must be fixed length with a record length of 80 without sequence numbers. If this file cannot be opened at startup time, MULTSESS/HPO will terminate and an information message will be written to the CONSOLE DD file.

PROFILE LIBRARY

A partitioned dataset, pointed to by the PROFILE DD statement, containing MULTSESS/HPO commands to be executed automatically at logon time (as a result of a PROFILE directory statement), or subsequently on demand.

The dataset must be fixed length with a record length of 120 and must not contain sequence numbers.

HELP LIBRARY

A partitioned dataset, pointed to by the HELP DD statement, containing help information for all MULTSESS/HPO commands and subcommands. Help information is accessed using the HELP command.

The dataset must be fixed length with a record length of 80 without sequence numbers.

MESSAGE LIBRARY

A partitioned dataset, pointed to by the MSGLIB DD statement, containing help information for all MULTSESS/HPO messages. Help information is accessed using the HELP command.

The dataset must be fixed length with a record length of 80 without sequence numbers.

CONSOLE LOG *THIS FILE IS MANDATORY*

A sequential dataset, pointed to by the CONSOLE DD statement, where MULTSESS/HPO writes audit, information and error messages (e.g. users logging on, application session initiated or terminated, etc.).

This file is commonly written to SYSOUT, but may be written to a dataset for post-processing. The dataset must be specified as RECFM=FBA and LRECL=133, with DISP=MOD.

If unable to open this file at startup time, MULTSESS/HPO displays a message on the MVS operator console and abends.

BROADCAST MESSAGE DATASET

A member of a partitioned dataset, pointed to by the NEWS DD statement, used to save hot news broadcast messages across restarts of MULTSESS/HPO.

The dataset must be fixed length with a record length of 80, a blocksize greater than 240 bytes and must not contain sequence numbers.

When MULTSESS/HPO is started, the contents of this member will be read into MULTSESS/HPO variables &SYSNEWS1, &SYSNEWS2, &SYSNEWS3, the hot news broadcast variables. These variables are always displayed on the MULTSESS/HPO dynamic panel and may optionally be included on the MULTSESS/HPO logo.

This file is optional. If not specified, broadcast messages will not be saved across restarts of MULTSESS/HPO.

Once loaded, MULTSESS/HPO works with the in-storage copy of the broadcast messages, thus avoiding repetitive file I/O whenever a dynamic panel or logo is displayed.

When broadcast messages are updated using a SET NEWS command, the updated hot news is saved in this dataset.

Users of NCI/XF should note that the format of this dataset is compatible with the NCI/XF Starter System hot news member. Broadcast messages updated within NCI/XF may be passed to MULTSESS/HPO using the NCI/XF SVC 34 interface to issue a SET NEWSFILE command to MULTSESS/HPO. This will cause the MULTSESS/HPO hot news variables to be refreshed from the news dataset.

Performance considerations

Design considerations

MULTSESS/HPO has been designed to use minimum resource in both CPU and I/O and therefore should cause no system degradation when running. However, MULTSESS/HPO holds its tables in virtual storage, so in environments with high paging rates and long I/O service times, response times may fluctuate.

Dispatching priority

Because MULTSESS/HPO is handling multiple terminals for varying types of applications it should be run with a dispatching priority higher than any application with which it is to communicate. This prevents an application transaction locking MULTSESS/HPO out and so degrading response times for all users.

Swapping

Because MULTSESS/HPO does very little processing, it spends most of its time in a wait status. Any task found by MVS to be waiting is 'swapped out'. Before the task may process more work MVS must swap it back in.

Swapping is extremely bad for response times, no matter how good the ASM I/O service times. It is therefore recommended to run MULTSESS/HPO as NON-SWAPPABLE. There are two ways to achieve this:

- define MULTSESS/HPO in the MVS Program Properties Table. (See IBM publication *Job Management* for more information)
- run MULTSESS/HPO from an APF authorized library, by naming the MULTSESS/HPO load library in the system APF list or adding it to the linklist. MULTSESS/HPO will then make itself NON-SWAPPABLE.

Chapter 2 - VTAM updates

Before running MULTSESS/HPO

The following VTAM updates are required before running MULTSESS/HPO at your installation.

1. INSTALL MULTSESS/HPO LOGMODE TABLE IN SYS1.VTAMLIB

Copy member MULTSESS from the supplied load library to SYS1.VTAMLIB.

The MULTSESS/HPO load library has a blocksize of 6144. If your SYS1.VTAMLIB library has a blocksize smaller than this, do not copy the member. Instead, you must re-assemble member MULTSESS/HPO from the source library, using the sample JCL supplied (member ASMSAMP) with a SYSLMOD statement pointing to SYS1.VTAMLIB.

The MULTSESS/HPO logmode table must contain an entry suitable for each terminal type in your installation that is to use MULTSESS/HPO. The supplied table contains entries for most terminal types. However if you have difficulty logging on to MULTSESS/HPO from a particular terminal, the most likely cause is the need to add a logmode entry for the terminal to the MULTSESS/HPO table. Please refer to *Chapter 5 - MULTSESS/HPO use of logmodes* in the Technical Reference Manual for details of how to do this.

2. IDENTIFY MULTSESS/HPO AS AN APPLICATION TO VTAM

Add a member to SYS1.VTAMLST to define MULTSESS/HPO as an application to VTAM:

```
                                                    col 72
APPLPGO VBUILD  TYPE=APPL
NODEMULT APPL   ACBNAME=MULTSESS,                    X
                PARSESS=YES,                         X
                MODETAB=MULTSESS,                    X
                AUTH=(ACQ,PASS),                     X
                EAS=50
```

Notes
A sample definition for MULTSESS/HPO and its virtual terminals is supplied in the control library loaded from the distribution tape. For further details refer to the *Installation Guide* that accompanies the tape.

The ACQ parameter is only required if the optional Automated Transaction Processor (ATP) feature is to be used.

The PASS parameter is only required if the Direct Application Connect feature is to be used for passing terminals directly to applications using the VTAM CLSDST PASS function. Refer to the section entitled *Direct application connection* on page 3.1 of the Customization Reference Manual for more details of this feature.

The EAS parameter should specify 10% more than the maximum expected number of terminals concurrently connected to MULTSESS/HPO.

3. DEFINE VIRTUAL TERMINALS TO VTAM

For applications such as IMS and CICS that require a unique logical unit name for each terminal session, you must define some virtual terminals for MULTSESS/HPO to use when communicating with them.

This is done by defining ACB entries in SYS1.VTAMLST. For ease of management, add them to the MULTSESS/HPO major node member created in *step 2* above.

The number of ACBs you require will depend on the number of MULTSESS/HPO users requiring access to the applications and the technique used for virtual terminal allocation. These are discussed in *Chapter 4 - Virtual Terminals* in the Technical Reference Manual.

A sample VTERM entry:

```
VTERM001 APPL ACBNAME=VTERM001,          X
              MODETAB=MULTSESS,          X
              EAS=5
```

A sample definition for MULTSESS/HPO and its virtual terminals is supplied in the control library loaded from the distribution tape.

For further details refer to the Installation Guide that accompanies the tape.

Notes
You may be adding a lot of entries here, so be aware of your installation's MAXAPPLS value.

You may choose any name for your virtual terminals. However, all VTAM resource names must be unique. **YOU CANNOT GIVE VIRTUAL TERMINALS THE SAME NAME AS YOUR REAL TERMINALS.** This is a VTAM restriction.

MULTSESS/HPO implements a masking technique to allow virtual terminals to be allocated on the basis of userid or the real terminal in use. This technique is described in *Chapter 4 - Virtual Terminals* in the Technical Reference Manual. Choosing a suitable VTERM naming convention now will be of considerable assistance when using the masking technique.

The MODETAB operand defines the logmode table to be used by VTAM when a session is started between MULTSESS/HPO and a target application. This should usually be specified to point to the table called MULTSESS that was copied to SYS1.VTAMLIB in *step 1.* However, in certain special circumstances (e.g. when using early releases of NCCF) you may wish to specify a different logmode table. Refer to *Chapter 5 - MULTSESS/HPO use of logmodes* in the Technical Reference Manual for further details.

4. DEFINE VIRTUAL TERMINALS TO YOUR APPLICATIONS

Applications that require terminals to be defined to them, notably CICS and IMS, must be updated to contain definitions for the virtual terminals.

When MULTSESS/HPO is managing sessions to such applications, the application thinks it is communicating with a real terminal.

Virtual terminals should be defined to the application exactly the same as the real terminals they represent, i.e. if the real terminal is an SNA model 2, define the virtual terminal as an SNA model 2.

A sample CICS definition for an SNA terminal might be:

```
TYPE=TERMINAL
TRMIDNT=name
GMMSG=YES
ACCMETH=VTAM
TRMTYPE=LUTYPE2
NETNAME=nodename
BRACKET=YES
CHNASSY=YES
RELREQ=(NO,YES)
BUFFER=256
RUSIZE=2048
```

Do **not** specify CONNECT=AUTO.

A sample IMS definition for an SNA terminal might be:

```
TYPE UNITYPE=SLUTYPE2
  MODEL=2
  OUTBUF=nnnn
  FEAT=(PFK,NOCD,NOPEN)
  OPTIONS=(TRANRESP,NOCOPY)
TERMINAL NAME=nodename
NAME lterm
```

In the above examples, nodename specifies the virtual terminal VTAM nodename, i.e. the label field of the APPL statement that defines the virtual terminal to VTAM.

5. ENABLE ACB SHARING FOR APPLICATIONS NOT REQUIRING VTERMS

For applications such as TSO, MIMS and ROSCOE that do not require a unique logical unit for each user logging on, simply update their ACB definitions in SYS1.VTAMLST to include the following parameter:

PARSESS=YES

This parameter allows the application to have multiple sessions with MULTSESS/HPO. It in no way affects the normal working of the application. MULTSESS/HPO will route all requests for sessions through its own single ACB.

Note: For TSO, this parameter need only be added to the TCAS definition.

6. DEFINE MULTSESS/HPO TO OTHER DOMAINS

If MULTSESS/HPO is to communicate with applications in other domains, add an entry for MULTSESS/HPO to the CDRSC table in each of the other domains:

```
MULTAPPL VBUILD TYPE=CDRSC
A01MULT1 CDRSC CDRM=M01
```

Note: This step is not required if dynamic cross-domain resource definition is used at your installation.

Chapter 3 - Defining applications to MULTSESS/HPO

Before starting MULTSESS/HPO

Before MULTSESS/HPO can start and maintain sessions with another VTAM application, the target application must be defined to MULTSESS/HPO by adding an entry to the MULTSESS/HPO Application Definition Table (ADT).

The ADT is a member of a partitioned data set pointed to by the APPLIDS DD statement in the JCL used to initiate MULTSESS/HPO.

An ADT entry supplies the information that MULTSESS/HPO needs to correctly maintain sessions with the application.

Sample application definition

A sample application definition for MULTSESS/HPO is supplied in the control library loaded from the distribution tape. For further details refer to the *Installation Guide* that accompanies the tape.

Direct application connect feature

In addition, users of the direct application connect feature may indicate if application sessions are to be maintained by MULTSESS/HPO, or if control of the terminal is to be passed directly to the application.

Security feature

The presence of an ADT entry indicates that suitably authorized MULTSESS/HPO users may start sessions with the application. This is a security feature. If an application is not defined in the ADT, no MULTSESS/HPO user may access the application.

Multiple entries

Multiple entries for the same application may be included to meet the varying needs of different users, for example different application descriptions, different logon scripts, multi-session or CLSDST PASS users.

Statement syntax

All statements must conform to the following syntax:

- All statement cards must begin in column 1.
- Only 1 statement per card is allowed.
- Only upper-case characters are allowed.
- An asterisk (*) in column 1 denotes a comment line.

Conventions used

Conventions used in parameter descriptions in this section:

- Parameters shown in italics should be replaced with appropriate values.
- A vertical bar (|) indicates a choice of keywords.

Available statements

APPLICATION

Denotes the start of a set of statements describing an application.

AUTO=YES|NO

If YES is specified, CINIT logon data as specified in the CINIT parameter will be automatically passed on new sessions with this application. Users in dynamic panel mode may suppress the passing of CINIT data, by typing an asterisk (*) in the command input area before initiating the session.

If NO is specified, automatic CINIT data will only be passed for users in dynamic panel mode who type an asterisk (*) into the command input area of the panel before requesting the session.

The default is NO.

BIND=*value*

This parameter is required for applications such as TSO, NCCF and NCI/XF that issue CLSDST PASS to pass control of the session to another address space. Please refer to *Coding the BIND parameter* on page 3.7 for details of the value to code.

CINIT=*logon data*

The specified logon data is data to be passed to the application as CINIT logon data when a new session is started by a user in dynamic panel mode. Refer to the AUTO= parameter described above for further details.

MULTSESS/HPO variables may be coded and will be resolved at the time the session is created e.g.

```
CINIT=&SYSUSER./&SYSPASS
```

CONNECT=YES|NO

If YES is specified, control of the terminal will be passed to the target application using CLSDST PASS when a session request is issued. Session switching will not be possible. In addition the VTERM, MAXUSERS, SCRIPT, IDLETIME, URC and BIND parameters are ignored.

If NO is specified, a request for a session is treated as a multi-session request. MULTSESS/HPO will issue a REQSESS and retain control of the terminal. Session switching will be allowed.

The default is NO.

IDLETIME=*nn*

Specify a time value, in minutes, to be used for application session idle timeout processing. If an application does not send any data for the specified period of time, the session will be automatically terminated.

Application session timeout may be based on the time of last application output, or the time of last keyboard input, depending on the setting of the APPL-IDLETIME startup parameter.

There is no default for this parameter. If it is omitted, the idle-timeout feature is disabled for this application.

INQUIRE=YES|NO

Specify NO for applications running under a version of VTAM that does not support the VTAM 'INQUIRE APPSTAT' macro (notably Airline Control Program (ACP)).

The default is YES.

MAXUSERS=*nnnn*

where:

nnnn

specifies the maximum number of MULTSESS/HPO users who may use this application concurrently. Specify a numeric value between 1 and 9999.

If you do not wish to assign a user limit to the application, do not code this parameter.

NODENAME=*nodename*

where:

nodename

specifies the VTAM nodename of the application.

PANDESC=*description*

where:

description

is up to 40 characters for display on the MULTSESS/HPO dynamic panel to describe the application in terms familiar to the end-user.

If you require different descriptions for different groups of users, code multiple ADT entries for the application using different symbolic names and descriptions.

SCRIPT=*scriptname*

Specifies the automatic running of the ATP script called *scriptname* at session initiation. This will apply to **every** user **every time** a session is started with this application, if the user is authorized to use the script.

Normal security verification will be done, using the optional ATP Control Table, before invoking the script. If the user is not authorized to use the script, the script will not be run.

The script will be loaded from the script library as indicated in the ATP Control Table entry for the user requesting the session. If the optional ATP Control Table is not present, the script will be loaded from the ATP public library.

The script specified here may be overridden on the SESSION statement in the user's directory entry or on a SESSION command typed by the user.

Multiple ADT entries for the application may be defined specifying different symbolic and script names.

SECURITY=*data*

The specified data will be passed to exits 1,2,3,4,5,6 and 8 in the EXITSECR field of the standard MULTSESS/HPO exit call parameter list.

Specify up to 8 bytes, in halfword, character or hexadecimal format (H'nn' C'c'..X'aa'). For example:

SECURITY=H'32',C'ABCD',X'8001'

will pass 8 bytes of data to the exits:

X'0020C1C2C3C48001'

This parameter may, for example, be exploited by users of the ACF2 security package to pass the application LIDREC offset and mask value to TPEXIT08 (dynamic panel build) or TPEXIT02 (session initiation exit) to check that the user is authorized to use the application.

SIMLOGON=YES|NO

Specify YES for applications that CLSDST PASS terminals on to further applications and then request connection on completion via a VTAM SIMLOGON request (notably IBM's INFONET and NETVIEW).

Please refer to the section entitled *Coding the BIND parameter* on page 3.7 for further information.

If NO is specified, this SIMLOGON will be rejected.

The default is NO.

SYMBOLIC=*symname*

where:

symname

is a symbolic name to be used on SESSION commands, or on SESSION statements in the MULTSESS/HPO directory when referring to this application and must be unique within the ADT. An application may be defined multiple times provided a unique symbolic name is used for each definition.

A default of the NODENAME assigned is taken if this statement is omitted.

The use of symbolic names gives the following advantages:

- provides a meaningful name for the end user to reference the application.
- multiple ADT entries may exist for the same application to meet different user needs (e.g. varying description fields, different logon script, multi-session or clsdst pass).
- applications may be moved (different VTAM nodename, possibly on a different CPU) with no change for the end-user.

URC=YES|NO

Specify NO for applications running under a version of VTAM that does not support use of the VTAM 'user correlation field' (notably Airline Control Program (ACP)).

The default is YES.

VTERM=YES | NO | UNQ | UNQSYM | UNQNODE

Specifies whether the application supports parallel sessions. Applications not supporting parallel sessions require the use of virtual terminals (VTERMs).

Specify VTERM=NO for applications that support parallel sessions (most do not). All user sessions with the application will share the MULTSESS ACB.

Specify VTERM=YES, VTERM=UNQNODE or VTERM=UNQSYM for applications that do not support parallel sessions. Common applications which require this are:

CICS IMS NCCF NCI PHOENIX VM/VCNA CA7

Specify VTERM=UNQSYM (or abbreviated form VTERM=UNQ) if a virtual terminal ACB allocated from a pool may not be shared for multiple sessions with applications using the same symbolic ADT name.

Specify VTERM=UNQNODE if a virtual terminal ACB allocated from a pool may not be shared for multiple sessions with applications with the same ADT nodename.

For sessions started using a specific virtual terminal (i.e. not chosen from a pool), UNQ, UNQSYM and UNQNODE imply VTERM=YES.

Refer to *Chapter 4 - Virtual Terminals* in the Technical Reference Manual for further details.

The default is NO.

Recommendation: Using VTERM=UNQNODE works reliably in most circumstances.

Sample ADT

```
*               Sample entry for TSO
APPLICATION
NODENAME=NHTSO1
BIND=TSO1
SYMBOLIC=TSO
PANDESC=SYSTEM A TSO
MAXUSERS=70
IDLETIME=28
AUTO=YES
CINIT=&SYSUSER./&SYSPASS
*              CLSDST PASS only TSO
APPLICATION
NODENAME=NHTSO1
SYMBOLIC=TSOC
PANDESC=SYSTEM A TSO (Connect)
CINIT=&SYSUSER./&SYSPASS
CONNECT=YES
*               Sample entry for IMS
APPLICATION
NODENAME=IMSPROD
SYMBOLIC=IMS
PANDESC=FINANCIAL CONTROL SYSTEM
VTERM=UNQ
MAXUSERS=20
*               Sample entry for MIMS
APPLICATION
NODENAME=NHMIMST
SYMBOLIC=MIMSTEST
PANDESC=MIMS TEST DATABASE MANAGER
*                CICS Payroll System
APPLICATION
NODENAME=A01CICSP
SYMBOLIC=PAYROLL
PANDESC=PAYROLL ADMINISTRATION SYSTEM
SCRIPT=CICSPAY
VTERM=UNQNODE
MAXUSERS=5
*               CICS Pensions System
APPLICATION
NODENAME=A01CICSP
SYMBOLIC=PENSIONS
PANDESC=PENSIONS ADMINISTRATION SYSTEM
SCRIPT=CICSPEN
VTERM=UNQNODE
MAXUSERS=20
```

Coding the BIND parameter

The ADT BIND parameter is required for applications that form a CLSDST PASS function after terminal connection, such as TSO, NCCF and VSPC.

It is required because the stem of the NODENAME for the initial application that you connect to may differ from that to which you are finally connected. For example, the TCAS address space nodename may be XXTSO2 whereas all user address spaces may be called TSO*nnn*.

The BIND parameter is MULTSESS/HPO's way of knowing that a request for XXTSO2 may be answered by TSO*nnn*.

The following is an example of a VTAM definition for TCAS:

```
XXTSO2 APPL ACBNAME=TSO <=== TCAS Definition

TSO2001 APPL ACBNAME=TSO0001 <=== 1st user addr space

TSO2002 APPL ACBNAME=TSO0002 <=== 2nd user addr space
```

In the above example the TCAS address space definition XXTSO2 bears no similarity to the TSO user address space names. MULTSESS/HPO needs some way of tying these 2 definitions together and this is done via the BIND parameter.

The Application Definition Table entry for TSO in this sample case is:

```
*       Example of a TSO entry.
APPLICATION
NODENAME=XXTSO2
BIND=TSO2
SYMBOLIC=A
```

To start a session with TSO the user would enter:

```
SESSION A
```

In addition, MULTSESS/HPO may be required to connect to target applications through a network monitor type application, such as NETMON or NCI, that issues CLSDST PASS to any destination. In this case the resultant application name and hence the VTAM BIND request, which MULTSESS/HPO must process, bear no resemblance to the initial name.

```
BIND=* and VTERM=UNQNODE
```

should be specified to allow these types of sessions.

Where the network monitor application issues a SIMLOGON to regain control of the terminal after the application has finished with it, SIMLOGON=YES should be specified to enable MULTSESS/HPO to queue the BIND resulting from the SIMLOGON for subsequent processing.

Users of NCI and NCI/XF should note that NCI does not issue SIMLOGON unless specifically requested to do so by use of the CONNECTR verb, except where NCI receives a third party notify informing it that the connection has failed. In this case NCI issues a SIMLOGON to regain the terminal. This facility can be suppressed by using the NOSIM TDT group option.

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Chapter 4 - Defining users to MULTSESS/HPO

Users are defined to MULTSESS/HPO by including an entry in the MULTSESS/HPO directory of users, a member of a partitioned dataset pointed to by the DIRECT DD statement in the JCL used to invoke MULTSESS/HPO.

MULTSESS/HPO directory entry

A MULTSESS/HPO directory entry specifies:

- the range of userids or terminals to which the entry applies
- the level of security validation required
- the command authority of the user
- whether the user may have concurrent sessions or whether control of the terminal is to be passed directly to the target application
- the maximum number of concurrent sessions allowed
- the virtual terminal(s) to be used for sessions with applications that do not support parallel sessions
- for user (as opposed to terminal) entries, the user may be restricted to use of certain terminals
- the applications that the user is authorized to access
- whether the user is subject to idle-timeout
- the name of a profile containing a list of MULTSESS/HPO commands to be executed automatically when the user logs on to MULTSESS/HPO.

The MULTSESS/HPO directory is one of the primary vehicles for establishing security and control in the MULTSESS/HPO environment. A sample directory is supplied with the product that includes a number of user entries suitable to demonstrate some of the options available within MULTSESS/HPO.

Note: This section describes the statements that make up a directory entry for a user and the various operands that may be coded on each statement.

Identifying users

Using userid terminal name

Access to MULTSESS/HPO and the range of facilities and applications available to the end user may be controlled by reference to:

- userid (with or without password validation)
- terminal name (with or without password validation)
- a combination of both

MULTSESS/HPO user

A MULTSESS/HPO user is identified either by a personal userid or by the name of the terminal being used. In either case, a matching entry must exist in the MULTSESS/HPO directory before the 'user' is allowed access to MULTSESS/HPO facilities.

The initial connection

When a terminal first connects to MULTSESS/HPO, as a result of a VTAM LOGON command or LOGAPPL request, the MULTSESS/HPO logo welcome panel is displayed. This prompts the user for the entry of a userid and password.

Entering a userid

When a userid is entered, MULTSESS/HPO searches its directory for a matching entry. The directory may specify the requirement for a password to be entered. In addition, a directory entry may specify that a userid may only be used on a specific terminal or group of terminals.

Using terminal name

If the TERMINAL-LOGON=YES startup parameter is coded and the user presses the <Enter> key at the MULTSESS/HPO logo without typing a userid, MULTSESS/HPO will use the terminal logical unit name (luname) to search the directory of users. If an entry is found that matches the luname, the user is assigned the characteristics specified in the directory entry. This may optionally include the requirement to enter a password. Status displays will show the luname as the MULTSESS/HPO userid.

Using both techniques

The two techniques of authorizing access, based on userid or terminal name, may be combined in a single directory. For instance, a group of terminals in an office may be defined by terminal name to give access to order entry and electronic mail systems without each clerk having to have a userid. If a support programmer needs to visit, for example to diagnose a problem with a CICS transaction, he could logon and gain access to a wider range of applications and MULTSESS/HPO facilities assigned only to his userid.

MULTSESS/HPO userid

Throughout this manual, all references to a MULTSESS/HPO userid should be taken as referring to either the userid specified at logon time, or the terminal name as matched in the directory at logon time.

Note: CONNECT is a reserved MULTSESS/HPO userid. A user cannot be defined in the directory of users with this userid.

Using generic entries in the directory of users

As an aid to installation and maintenance, many of the parameters in the MULTSESS/HPO directory of users support generic values. These may be used to specify a range of values to be matched against when searching the directory.

Generic entry

A generic entry consists of a stub followed by an asterisk character (*). When matching against such entries, only the stub will be used for comparison purposes. The most helpful use of generics and masking is in the name parameter of a USER statement, which identifies which users this directory entry applies to. For instance:

USER SYSTSO1	-	entry applies only to user SYSTSO1.
USER SYST*	-	entry applies to all users with a userid starting SYST.
USER LOCAL*	-	entry applies to all terminals with names starting with the characters LOCAL.
USER *	-	default entry for all users.

Using masked entries in the directory of users

Mask characters may be included within certain directory statement parameters to provide generalized matching instead of, or in addition to, the use of generics as described in the previous paragraph. Two masking techniques are available and are used for different purposes:

- mask characters that cause a parameter value to be generated on the basis of the userid or terminal in use.

  This dynamic build is particularly useful when general purpose generic or masked directory entries are used. The statements within the general purpose entry may themselves be made generally applicable. The parameter values will be generated at logon time on the basis of the masks.

- mask characters to be used when matching values, such as userid or terminal name, against the value specified in the directory.

  A plus (+) mask character may be specified as part of the parameter value in the directory to indicate character positions to be ignored when the value entered (or generated) by the user is matched against the directory.

Example

```
* General purpose entry.
* Profile name same as userid.
* Logon from local terminals only.
* VTERM based on combination of
* real luname and userid.
* Logon scripts based on userid.
* IMS only available from
* model 2 terminals.
*
USER   + + DEV *  RACF  G  5
PROFILE  ???????
TERMINAL  LOC *
VTERM    VT + + +???
SESSION  + + + TSO *  *  *  *  T%
SESSION  + + + IMS *  *  ++++++M2  N2DN  1%
```

Generating parameters using masks

The masking characters described below may be used to generate values at logon time based on the userid, the real terminal or a combination of both.

This technique may be applied to:

- the *membername* parameter on the PROFILE statement.
- the *acbname* parameter on the VTERM statement.
- the *script* parameter, and in part the *terminal* parameter (see ? and % below), on the SESSION statement.

MASK CHARACTER	ACTION
+	This character position in the ACB or script name will be replaced with the corresponding character position from the real terminal logical unit name (luname).
?	This character position in the ACB or script name will be replaced with the corresponding character position from the userid. (This does not apply to *terminal* parameter).
&	The remaining character positions of the ACB or script name will be filled with as many characters from the terminal name as are required to complete the 8 digit name, starting from the beginning of the real terminal name. This technique enables ACB names to be generated by prefixing the real terminal logical unit name.
%	As for & above, except that the fill characters are taken from the start of the userid. (This does not apply to *terminal* parameter).

Examples

```
Directory specifies:       VTERM   ???V++++ symname
Userid:                            IMSUSER1
User logs on at luname:            ROMELU01
Vterm ACBNAME generated:           IMSVLU01
```

```
Directory specifies:       VTERM   V&      symname
User logs on at luname:            T1234567
Vterm ACBNAME generated:           VT123456
```

Order of directory search

When a new user logs on to MULTSESS/HPO, the directory is searched for an entry that matches the userid and (where specified) the terminal name.

A terminal is permitted to log on when the first matching userid/terminal combination is found in the directory that has a USER entry equally or better qualified than any previous matching USER entry. (See Note at end of example.)

The directory is searched in a top-down fashion, and when specifying generic or masked user entries in the directory this can be exploited by preceding entries with specific user names that have to be treated as exceptions. In other words the generic or masked entries can be used for a 'catch all' for the majority of users, and specific minority users can be treated as exceptions by placing them before the generic and masked entries.

Example

Employees working in an open plan accounts department are allowed access to different records depending on the requirements of their job and their departmental authority. A directory could be set up as follows:

```
USER *
TERMINAL TRG
PROFILE TRAINING

USER ACCSP1
TERMINAL ACCNT1
PROFILE DELRECS

USER ACC*
TERMINAL ALLREC1
TERMINAL ALLREC2
PROFILE UPDTRECS

USER AC*
TERMINAL SELREC1
TERMINAL SELREC2
PROFILE SELRECS
```

This directory allows an accounts supervisor to delete accounts records through his own terminal ACCNT1 and profile DELRECS. Only the supervisor's specific userid ACCSP1 can provide access through his own terminal.

The two terminals ALLREC1 and ALLREC2 are allocated to accounts staff who are allowed to view and update all accounts records, but are not allowed to delete records. These staff have userids in the form ACCDP1, ACCDP2, ACCDP3 etc. A generic userid entry (ACC*) will therefore allow these members of staff to view and update all records through profile UPDTRECS.

The two terminals SELREC1 and SELREC2 are allocated to junior staff who are allowed to view selected accounts records, but are not allowed to update or delete records. These staff have userids in the form AC1, AC2, AC3 etc. A generic userid entry (AC*) will allow these junior staff to view selected accounts records through profile SELRECS.

One terminal is set aside in a corner of the office for training purposes. Departmental policy requires that this specific terminal be used for training.

continued....

Note: This example directory demonstrates how ACC prefixed userids (e.g. ACCDP1) will not be able to use terminals SELREC 1/2, due to the matching USER entry (USER AC*) not being as well qualified as a previous matching USER entry (USER ACC*). In other words, the ACC prefixed users (e.g. ACCDP1) are prevented from using the terminals dedicated to the junior staff (AC*), despite their userids beginning ACC matching the USER AC* statement.

Amending an existing directory

The MULTSESS/HPO directory is a member of a partitioned dataset containing plain language statements, each of which is described in detail later in this chapter.

When MULTSESS/HPO is started, the contents of the directory, pointed to by the DIRECT DD statement, are loaded into storage in a compressed internal format.

No assemblies or other preprocessing is required.

Amending the directory

To amend the directory, simply update the existing member or create a new member using any suitable editor. MULTSESS/HPO always works with the in-storage copy of the directory, so the original member may be edited with no danger of MULTSESS/HPO accessing a partly updated entry.

When your amendments are complete, the new directory may be brought immediately into use by issuing the MULTSESS/HPO DIRECT command.

No preprocessing is required and there is no need to stop MULTSESS/HPO.

Errors

If the new directory contains errors, the statements in error will be displayed on the terminal issuing the DIRECT command. MULTSESS/HPO will continue to use the original in-storage directory.

The DIRECT command is described in detail in the MULTSESS/HPO *User Reference Manual.*

Rules of syntax

- All statements must begin in column 1.
- Only one statement per record.
- At least one space must delimit each operand.
- Only UPPERCASE letters are allowed.
- Statements must be specified in the order:

  USER
  PROFILE (optional)
  TERMINAL (optional)
  VTERM (optional)
  SESSION

- Other statements may be coded in any order following those listed above.
- Where an asterisk appears in column one, the entire line is treated as a command and ignored.
- Multiple VTERM and SESSION statements may be coded to indicate a range of virtual terminals and applications available to the user.
- Multiple operands may be coded on a single statement if placed between brackets:

  VTERM (TERM001 VT1) (TERM002)

  is equivalent to:

  VTERM TERM001 VT1
  VTERM TERM002

- In all parameter descriptions that follow, keywords shown in bold **UPPERCASE** must be coded exactly as shown.
- Parameters shown in *italics* should be replaced with the appropriate values.

USER

Description The USER statement marks the start of an entry for:

- an individual user or group of users
- an individual terminal or group of terminals.

Format

USER ***name password class sessions***

where:

name defines either:

a userid or a generic group of userids, or

an luname or a generic group of lunames.

Plus (+) characters may be coded to indicate character positions to be ignored when matching against the entered userid or terminal name.

The userid MULTOPER, LOGON, LOGOFF and HELP are reserved for internal use and must not be specified on USER statements.

password Specifies the password for this user, or one of the following keywords:

RACF	-	the password will be verified against a RACF or CA-TOP Secret database.
ACF2	-	the password will be verified against a CA-ACF2 database.
SAC	-	the password will be verified against an ALERT/SAC database.
NOPASS	-	password validation is not required for this user.
EXIT	-	MULTSESS/HPO user exit number 7 (with call code 71) for user security validation.
EXIT*n*	-	as for EXIT above, but the value *n* will be passed to EXIT07 in the EXITOPT field of the entry parameter list.

class assigns a command authority to the user.

A user is allowed to use only those MULTSESS/HPO commands of an equal or lower authority level than the value specified here.

Specify an alphabetic character from A to G. The default is G.

A is the highest authority level giving access to all MULTSESS/HPO commands. G is the lowest authority giving access to a subset of commands suitable for the general end-user.

sessions defines the maximum number of sessions the user may have active at one time.

Specify a numeric value from 1 to 255 or * for no limit. The default is as specified in the CONCURRENT-SESSIONS startup parameter.

Examples

```
* TELEPHONE ORDER CLERKS -  COMMAND CLASS G
* ACCESS BY TERMINAL ID  -  NO PASSWORD VALIDATION
* MAXIMUM OF 2 SESSIONS
*
USER LUORD* NOPASS  G  2
.... other statements ....
```

```
* SYSTEMS DEVELOPMENT STAFF - COMMAND CLASS G
* ACCESS BY USERID
* PASSWORD VALIDATION BY USER EXIT 7 PASSING VALUE X
* MAXIMUM OF 5 CONCURRENT SESSIONS
*
USER ++DEV* EXITX  G 5
.... other statements ....
```

```
* OTHER TECHNICAL USERS - COMMAND CLASS C
* ACCESS BY USERID      - PASSWORD VALIDATION BY RACF
* MAXIMUM OF 15 CONCURRENT SESSIONS
*
USER TSG*  RACF  C 15
.... other statements ....
```

```
* ALL OTHER USERS - COMMAND CLASS G
* ACCESS BY USERID
* PASSWORD VALIDATION BY USER EXIT WITH NO PASSED VALUE
* MAXIMUM OF 3 SESSIONS
*
USER * EXIT  G  3
.... other statements ....
```

```
* MULTSESS ADMINISTRATOR - COMMAND CLASS A
* ACCESS BY USERID       - PASSWORD VALIDATION BY RACF
* UNLIMITED APPLICATION SESSIONS
*
USER TSGOO1 RACF  A *
.... other statements ....
```

PROFILE

Description The PROFILE statement specifies the name of a member of the profile dataset containing commands to be executed automatically when the user logs on to MULTSESS/HPO.

Format

PROFILE ***membername***

where

membername specifies a member of the partitioned dataset pointed to by the PROFILE DD statement.

Notes: This statement is optional. If omitted, automatic commands will not be executed at logon time. The user will be placed into basic mode with no PF keys set.

Common uses of a profile at logon time might be:

- set up PF key definitions
- automatically start one or more application sessions
- switch the user into dynamic or user panel mode
- switch directly into an application session.

A masking technique may be used to generate the value of *membername* on the basis of the userid or real terminal being used. For further details please refer to *Generating parameters using masks* on page 4.4.

EXIT07 (call code 71), optionally called when a user logs on to MULTSESS/HPO, may supply the name of the profile to be executed, overriding the name specified in the directory (refer to the EXIT parameter of the USER statement).

For further details about profiles in general, refer to *Chapter 3 - Profiles* in the Technical Reference Manual.

TERMINAL

Description The TERMINAL statement may be used to limit access to MULTSESS/HPO to the terminal or range of terminals specified. The user may log on to MULTSESS/HPO only from the terminal(s) specified.

Format

TERMINAL *luname*

where:

luname is the VTAM luname of a terminal that the user may use to log on to MULTSESS/HPO.

A generic name (e.g. RMT*) may be specified.

Plus (+) characters may be used to indicate character positions to be ignored when validating the terminal in use.

Notes: This statement is optional. If omitted, the user may use MULTSESS/HPO from any terminal in the network.

This statement has no relevance if the name specified on the USER statement for this entry contains a terminal name.

Multiple TERMINAL statements may be coded for a user to identify a range of permissible terminals.

Examples

user may only use terminal LOCAL001 ==>	`TERMINAL LOCAL001`
user may only use any terminal starting LOCAL ==>	`TERMINAL LOCAL*`
user may use any terminal starting LOCALA and terminal RMT007 ==>	`TERMINAL LOCALA*` `TERMINAL RMT007`
same as previous example ==>	`TERMINAL (LOCALA*) (RMT007)`

VTERM

Description The VTERM statement indicates the logical unit name and authorizes the use of a virtual terminal to be used when communicating with an application that requires a unique terminal per session

Format

VTERM *acbname symname*

VTERM POOL*name*

VTERM (*acbname symname*) (POOL*name*)

VTERM (POOL*nam1*) POOL*nam2*).....(POOL*namn*)

where:

acbname specifies the name of an ACB in SYS1.VTAMLST that defines a virtual terminal to be used for sessions with applications that require a unique terminal per session. The virtual terminal ACBNAME is assigned as the user's logical unit name regardless of the real terminal in use.

A masking technique is available to generate the ACBNAME on the basis of the userid and/or the real terminal name. Refer to *Generating parameters using masks* on page 4.4 for further details.

symname is an optional symbolic name to be assigned to this VTERM.

If omitted, this parameter assumes the same value as *acbname*.

This user-friendly name will be used on SESSION statements and in status displays.

POOL*name* **POOL*namn*** specifies the name of a virtual terminal pool. An ACB will be allocated from the pool at session initiation time.

A generic value may be specified to indicate a range of pools to be used.

A masking technique is available to generate *name* (or *namn*) on the basis of the userid and/or real terminal in use. Refer to *Generating parameters using masks* on page 4.4 for further details.

Notes: The VTERM statement is optional. If omitted, the user is not authorized to use virtual terminals and may only create sessions with applications that do not require the use of VTERMs, i.e. those defined with VTERM=NO in the MULTSESS/HPO ADT.

Multiple VTERM statements may be coded to define a range of virtual terminals that may be opened by the user. This is normally only necessary for users who require more than one session with applications like CICS and IMS that do not support parallel sessions, or for specialized technical users. Most users will share a single VTERM for all their application sessions.

If the VTERM masking technique is used for non-pooled ACBs, the *symname* parameter should be coded to provide a consistent means of referring to the VTERM, since the actual ACBNAME generated will vary depending on userid or real terminal name.

The *symname* parameter must not be coded if VTERM pooling is to be used.

When VTERM pooling is used, each VTERM statement authorizes the use on one ACB from the indicated pool(s). A single ACB may be shared by multiple applications and is sufficient for users who require only a single session with each application. Users who require more than one concurrent session with an application that does not support parallel sessions (e.g. CICS, IMS) will need to use a separate VTERM for each session with the application. Multiple VTERM statements should be coded to authorize the user to open more than one ACB from the pool.

For a general discussion on the use of virtual terminals, refer to *Chapter 4 - Virtual Terminals* in the Technical Reference Manual.

Examples Examples of the VTERM statement are given on the next page.

Examples

Sessions with applications requiring VTERMs will use the ACB defined as TERM001 in SYS1.VTAMLIST.

```
VTERM TERM001
```

Sessions will use the ACB called TERM001. This will be referred to by the name VT1 on SESSION statements and in status displays.

```
VTERM (TERM001 VT1)
```

The user may establish sessions using either TERM001 or TERM002 by referencing the names VT1 or VT2 respectively.

```
VTERM (TERM001 VT1) (TERM002 VT2)
```

Session statements referencing SYMT will use an ACB derived from the name of the real terminal in use.

```
VTERM (V+TERM& SYMT)
```

Session statements referencing SYMU will use an ACB derived from the userid in use.

```
VTERM (V????% SYMU)
```

A free ACB will be chosen from any pool with a name having M2 in positions 7-8 of the poolname.

```
VTERM POOL++M2
```

A free ACB will be chosen from the virtual terminal pool called POOLCIC1 at session initiation time.

```
VTERM POOLCIC1
```

A free ACB will be chosen from any VTERM pool beginning POOLN at session initiation time.

```
VTERM POOLN
```

SESSION

Description The SESSION statement serves two main purposes:

- authorizes the user for access to the specified application(s) and designates the application to be included on the dynamic panel for this user.
- specifies optional parameters used to initiate the session with the application.

Format

SESSION ***applname vterm terminal logmode script***

where:

applname specifies the name of an application the user is authorized to access. The name specified is the symbolic application name as defined in the SYMBOLIC parameter in the ADT.

A generic name (e.g. TSO*) may be specified to authorize the use of a range of applications.

A value of asterisk (*) may be specified to authorize use of all defined applications.

Plus (+) characters may be used to indicate character positions to be ignored when matching against the session name specified by the user. For example +++TSO* authorizes use of any application with TSO in positions 4-6 of the application symbolic name.

vterm specifies the symbolic name of a virtual terminal to be used when starting sessions with the application(s).

The name specified should refer to the symbolic name defined on a preceding VTERM statement in the entry for this user.

Specifying a value of asterisk (*) will cause the virtual terminal defined by the first VTERM statement for this user to be selected.

If the application does not require use of a virtual terminal, this parameter will be ignored.

terminal restricts access to the application from the specified real terminal(s).

A generic value may be specified (e.g. RMT*) to specify a range of terminals. Plus characters (+) may be coded to indicate positions to be ignored when matching against the real terminal name (e.g. RMT++A*).

Omit this parameter, or specify a value of asterisk (*), to allow access from any terminal.

continued ....

logmode the name of the logmode to be used for sessions with this application. This name specified must exist in the MODETAB defined as part of the virtual terminal ACB definition in SYS1.VTAMLST, or in the IBM default logmode table ISTINCLM.

This parameter is only required when you wish to override the default logmode name which MULTSESS/HPO assigned at logon time (e.g. when using NCCF V1.0 which requires a logmode called DSILGMOD). Refer to *Chapter 5 - MULTSESS/HPO use of logmodes* in the Technical Reference Manual for further details.

Omit this parameter, or code a value of asterisk (*) to use the default logmode.

script users of the ATP optional feature may specify the name of a logon script to be executed when the session is started. The script may be loaded from the public or a private ATP script library, depending on the contents of the optional ATP control table. This script will also be invoked for all subsequent definitions of the same applname within the user's directory.

A masking technique may be used to generate the value of this parameter at logon time. Refer to *Generating parameters using masks* on page 4.4 for further details.

Note: All parameters are positional. If you wish to code a parameter but omit a preceding parameter, code an asterisk (*) in place of the omitted parameter.

Examples

Use of TSO is authorized from any terminal. Virtual terminal not required. Default logmode will be used.

```
SESSION TSO
```

Access to any application defined in the MULTSESS ADT. Accept all defaults. No terminal restrictions. No ATP script required.

```
SESSION *  *  *
```

Authorize the use of any TSO application. Use of virtual terminal not required. Access restricted to terminals starting LOCAL. Default logmode to be used. Script TSOISPF to be run at session initiation.

```
SESSION TSO*  *  LOCAL*  *  TSOISPF
```

Authorize use of any IMS application. Default virtual terminal (first VTERM statement). Access restricted to terminals starting REMOTE1. Force SNA model 2 logmode. Script IMSECUR to be run at session initiation.

```
SESSION IMS*  *  REMOTE1*  D4C32782  IMSECUR
```

NO-*idle*-LIMIT

Description These statements may be used to exclude this user from MULTSESS/HPO idle timeout processing, application idle timeout processing or both.

Format

```
NO-APPL-LIMIT

NO-USER-LIMIT

NO-IDLE-LIMIT
```

where:

NO-APPL-LIMIT exempts the user from application idle timeout processing. If not specified, application sessions will be terminated if not referenced within the time limit set by the IDLETIME parameter in the ADT definition for the application.

NO-USER-LIMIT exempts the user from MULTSESS/HPO idle timeout processing. If not specified, the user will be automatically disconnected from MULTSESS/HPO if no terminal activity occurs within the time limit specified by the USER-IDLETIME startup parameter.

NO-IDLE-LIMIT is provided for compatibility with previous releases, and is equivalent to specifying both NO-APPL-LIMIT and NO-USER-LIMIT.

SECURITY

Descriptions The SECURITY statement specifies up to 8 bytes of data to be passed to EXIT07 (call code 71) when the user logs on to MULTSESS/HPO.

Format

SECURITY = ***user-data***

where:

user-data specifies up to 8 bytes of data to be passed to EXIT07 (call code 71) in the EXITSECR field of the standard entry parameter list. (Note that call code 71 is only effective for users with the keyword EXIT specified in the password field of the USER statement.)

The data may be specified as halfword, character or hexadecimal in assembler language format. For example:

SECURITY=H'32',C'ABCD',X'8001'

will pass 8 bytes of data to the exit in the EXITSECR field:

X'0020C1C2C3C448001

Notes: This statement may be used to pass information to EXIT07 (call code 71) to perform a lookup in a security database to check that the user is allowed to access MULTSESS/HPO. For example, users of the ACF2 security package may pass the LIDREC offset and value for testing. EXIT07 can then test the user's LIDREC for the appropriate value.

Use of this technique may considerably reduce the number of entries in the MULTSESS/HPO directory by allowing extensive use of generic entries. This in turn will reduce directory maintenance.

Including this parameter in the directory, rather than as a global startup parameter, allows the directory to be used concurrently by more than one MULTSESS/HPO. For instance, the directory may contain two discrete sets of userids for a test and a production version of MULTSESS/HPO.

CONNECT-ONLY

Description The CONNECT-ONLY statement indicates that multiple sessions are not supported for this user. The user is authorized to use only those applications defined in the ADT with CONNECT=YES. All session requests will cause control of the terminal to be passed to the target application using the CLSDST PASS macro.

Format

```
CONNECT-ONLY
```

Notes: Whenever a CONNECT-ONLY user issues a SESSION request, the terminal is disconnected from MULTSESS/HPO and control is passed to the target application.

If SESSION * is specified in the user's directory entry, only those applications defined in the ADT with the CONNECT=YES parameter will be available.

If an overriding logmode name was specified on the session request, this logmode name will be passed as part of the CLSDST PASS operation. It should exist in the logmode table pointed to by the MODETAB operand specified on the real terminal definition in SYS1.VTAMLST, or in the IBM default logmode table ISTINCLM.

If an overriding logmode is not specified, no logmode name will be supplied as part of the CLSDST PASS operation. VTAM will use its standard search for logmode bind parameters based on the DLOGMOD and MODETAB operands in the terminal definition, exactly as if the terminal had logged on directly to the application.

If MULTSESS/HPO is defined as the controlling application (using the LOGAPPL VTAM parameter), the action taken when the user logs off the target application depends on the setting of the CONNECT-RECONNECT startup parameter. So

CONNECT-RECONNECT=YES

will automatically reconnect the user to MULTSESS/HPO, whereas

CONNECT-RECONNECT=NO

will display the MULTSESS/HPO logo.

Sample directory entries

Examples

1.
Entry for an individual userid MAINT. Password is SYSPMAN. Use virtual terminal ACB VTERM009. Authorized to use any **TSO** application, production **IMS** and production **CICS** using ATP script CICSECUR (script will run when CICS session starts).

```
USER    MAINT  SYSPMAN  A  *
PROFILE MAINT
VTERM   VTERM009
SESSION TSO*
SESSION IMSP  *
SESSION CICSP *  *  *  CICSECUR
VTERM009,
VTERM009.
```

2.
Entry for all users in the development group.
Password validation against RACF database.
Authorized to use applications:

Test IMS, using VTERM based on real terminal name, but only from a local terminal.
Test CICS, using a VTERM from the pool called POOLCICS
Live CICS, using a VTERM from pool POOLCICS, but only from terminal PU05LU12, always in SNA model 2 mode with logon script CICSLOGN.

```
USER    +DEV*  RACF  G  4
PROFILE PROGDEV
VTERM   POOLCICS
VTERM   (V+++++++  VTUNQ)
SESSION IMST   VTUNQ   LOCAL*
SESSION CICST  POOLCICS
SESSION CICSP POOLCICS PU05LU12 D4C32782 CICSLOGN
```

3.
All terminals with an luname starting with the characters LOCALA may connect to any application defined in the ADT with:

CONNECT=YES.

CLSDST PASS will be used to pass control of the terminal to the application.

```
USER      LOCALA*   NOPASS  G  1
SESSION  *
CONNECT-ONLY
```

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Chapter 5 - Pre-startup and startup options

Pre-startup options

Pre-startup options are included in the PARM parameter of the MVS JCL EXEC statement. An example of coding an EXEC statement with pre-startup options is as follows:

```
// EXEC PGM=HPO, PARM='SPCHK'
```

The following three pre-startup options are available:

SPCHK turns on storage footprinting, allowing the product to detect certain storage overwrites. This option is the default (i.e. footprinting will be turned on unless NOCHK is specified).

NOCHK turns off storage footprinting (the product will not be able to detect certain storage overwrites). This saves the extra storage that is added to each area when storage footprinting is enabled. The option may be useful for non-XA MULTSESS/HPO users who are storage-constrained.

Note that when footprinting is turned off, any storage problem that must be recreated to provide a diagnosis requires footprinting to be turned on again with the SPCHK parameter.

NONXA turns off AMODE 31 running on an XA system. If specified (or if a non-XA system), no BSM instructions will be issued and AMODE will remain 24. The default is to use AMODE 31 on MVS/XA, with BSM instructions to set AMODE 24 where required.

NONXA will place everything below the 16mb line and therefore restrict the number of users.

Startup options

Sample startup options are supplied in the control library loaded from the distribution tape. For further details refer to the *Installation Guide* that accompanies the tape.

Specified parameters

Startup options may be specified via the STARTUP DD statement in the JCL used to initialize MULTSESS/HPO.

All parameters are optional unless otherwise stated.

The available options fall into two main categories:

- parameters that customize the way MULTSESS/HPO runs at your installation
- parameters that set global default values for user options. These values will be used, if not overridden, for particular users.

Rules of statement syntax

All startup options must conform to the following rules of syntax:

- all statements must start in column 1
- only one statement per card is permitted
- keywords must be specified in uppercase
- an asterisk (*) in column 1 denotes a comment.

Conventions used on subsequent pages

The subsequent pages of this chapter provide a list of MULTSESS/HPO startup options and a description of each option. These descriptions are subject to the following conventions:

- Parameter values shown in UPPERCASE should be coded exactly as shown
- Parameter values shown in *italics* should be replaced by an appropriate value as indicated in the parameter description
- Where a choice of values is available, the list of permitted values is given and the | character is used as a delimiter e.g.

  YES|NO

means you can choose either YES or NO.

ACBNAME=*name* *THIS PARAMETER IS MANDATORY*

where:

name specifies the VTAM ACBNAME used to define MULTSESS/HPO to VTAM.

APPL-IDLETIME=KEYBOARD|APPL

Specifies whether the application timeout is to be controlled based on input or output sends.

This option is only relevant for applications such as certain performance monitors that send unsolicited output data. It enables sessions to be timed out on the basis of user input rather than application output.

KEYBOARD indicates that the timeout interval starts when data is entered at the terminal. If the user does not enter more data within the timeout interval, the session will be terminated.

APPL indicates that the timeout interval starts when data is sent to the terminal from the application. If the application does not send more data within the timeout interval, the session will be terminated.

The default is APPL.

ATP-MAXIMUM-RUSIZE=*nnn*B|*nn*K

The size of the largest RU that can pass between MULTSESS/HPO and ATP. This must be less than or equal to the value specified in the MAXIMUM-RUSIZE parameter of the ATP address space.

Specify *nnn* as a numeric value expressed in bytes (B) or kilobytes (K).

Warning: The value specified will be rounded up as follows:

less than 1K next multiple of 256 bytes.

less than 6K next multiple of 512 bytes.

less than 16K next multiple of 1K.

less than 32K next multiple of 2K.

less than 60K next multiple of 4K.

Values greater than 60K are rounded down to 60K.

Note: The rounded value must be less than or equal to the values specified for the MAXIMUM-RUSIZE startup parameters for both the MULTSESS/HPO and ATP address spaces. It is recommended that all three values be specified the same.

ATP-NODENAME=*name*

Only required if the ATP (Automated Transaction Processor) script option is installed at your installation.

If present, requests that MULTSESS/HPO initiate a connection to an ATP address space using VTAM nodename *name*.

The *name* specified should be the name field, columns 1 - 8 of the APPL statement that defines the ATP application in SYS1.VTAMLST.

ATTN-MENU-KEY=YES|NO

If YES is specified, the ATTN key will be treated as the MENU key. This allows ATTN to be sent to the session if pressed twice. It also provides an 'escape route' back to the menu if the keyboard is locked.

The default is **NO**.

AUTHORIZED-PATH=YES

MULTSESS/HPO supports the use of VTAM authorized path, SRB mode processing. To invoke SRB mode, MULTSESS/HPO must be executed from an authorized library. To do this the above statement must be added to the MULTSESS startup option pointed to by the STARTUP DD statement.

AUTO-LOGON=YES|NO

Specify YES to cause the user to be always logged on to MULTSESS/HPO as soon as the terminal connects to MULTSESS/HPO, using the terminal name as the userid.

The default is **NO**.

CODE=*ccccccccc* *THIS PARAMETER IS MANDATORY*

A nine digit authorization code that enables you to run MULTSESS/HPO on your CPU. This code will be supplied by your local marketing representative.

COMMAND-CHAR=*char*

The *char* specifies the global default for the MULTSESS/HPO command separator. Multiple commands typed at the terminal or included in a PF key setting will be delimited by this character.

The default is **X'1E'** (field mark)

CONCURRENT-SESSIONS=*nnn*

Specifies a global default for the maximum number of application sessions a user may have active at the same time. The value nnn must be numeric in the range 1 to 255.

The default value is **3**.

This value may be overridden for specific users in the user's MULTSESS/HPO directory entry.

CONFIDENTIAL-TEXT=YES|NO

Specify **YES** to stop user data from appearing on a VTAM GTF buffer trace of sessions managed by MULTSESS/HPO.

The default is **NO**

CONNECT-RECONNECT=YES|NO

Specifies the action to be taken when a terminal returns to MULTSESS/HPO when control of the terminal has previously been passed to an application by CLSDST PASS processing. (Direct Application Connect feature).

Specify YES to cause the terminal to be reconnected to MULTSESS/HPO using the userid which issued the original SESSION command.

Specify NO to cause the MULTSESS/HPO logo panel (with prompts for userid and password) to be displayed on the terminal when MULTSESS/HPO regains control of the terminal.

The default is **NO**.

DATE=*format*

The date format for any message generated by MULTSESS/HPO. The field order and separation characters can be specified. For example:

MM/DD/YY

YY:DD:MM

The default is **DD/MM/YY** - day, month and year, separated by the slash (/) character.

Note: In compliance with year 2000 requirements, displayed dates now have a four digit year format. The format of the DATE= startup option remains unchanged, i.e. the year format is a two digit entry (YY) which is changed to four digits (YYYY) for display.

DISCONNECT=MULTSESS|LOGOFF

Defines the next screen to be displayed after a user issues a DISCONNECT command.

Specify **MULTSESS** to cause MULTSESS/HPO to retain control of the terminal. The MULTSESS logo will be displayed.

Specify **LOGOFF** to cause MULTSESS/HPO to return the terminal to VTAM, or the terminal's controlling application, such as NCI.

The default is **MULTSESS**.

DISCONNECT-USER-CLEANUP=YES|NO

Specify YES to cause automatic cleanup of disconnected users without active application sessions. The user is effectively logged off as if a LOGOFF command had been issued. All storage and control blocks owned by the user are cleaned up and released.

Cleanup may occur as soon as a DISCONNECT command is issued, or some time later, when a disconnected user's last session is idle-timed out.

The default is **NO**.

Note: This startup option **must** be set to YES whenever the LOGOFF=LOGO startup option is set. If not set to YES, a correct logoff procedure will not be performed.

DISCONNECT-WITH-SESSIONS=YES|NO

Specify NO to disable the disconnect/reconnect feature. If the user has any active application sessions, a DISCONNECT request will be refused.

Note that entering NO will override the period of time specified in the USER IDLETIME startup parameter for users who have sessions.

The default is **YES**.

EXIT=*nnnnnnn*

Identifies which MULTSESS/HPO exit routines are to be enabled. Specify up to nine numeric digits to name the required exits. For example:

EXIT=126	enables exits 1, 2 and 6
EXIT=04	enables exits 0 and 4
EXIT=012345678	enables all available exits.

Exits may be dynamically enabled, disabled or loaded while MULTSESS/HPO is running using the LOAD and EXIT commands.

Note: Exit 4 must be enabled for the PRINT command to be operative. The default is 'all exits disabled'.

GENERIC-RESOURCE=*name*

Causes MULTSESS/HPO to be defined as a VTAM generic resource. This parameter provides support for Goplex and IBM's Parallel Sysplex environment. A new authorization code must be obtained from PassGo to allow use of this parameter.

(Goplex is a PassGo product which allows multiple copies of MULTSESS/HPO and ACCESS to be controlled from a single point.)

LOGOFF=LOGO

When specified, this will return users to the MULTSESS/HPO logo at logoff and not to VTAM.

Note: When this startup option is specified, the DISCONNECT-USER-CLEANUP startup option **must** be set to YES to ensure a correct logoff procedure is performed.

LOGON-DISCONNECT=YES|NO

Retained for compatibility with previous releases. Refer to the description of the REMOTE-DISCONNECT parameter for further details.

MAXIMUM-RUSIZE=*nnn*B|*nn*K

Specifies the largest REQUEST UNIT (RU) that MULTSESS/HPO will receive from an application or terminal. The values ***nnn*** and ***nn*** are numeric and expressed in bytes (B) or kilobytes (K). The maximum permitted value is 65,536 bytes (64K).

If specified too large, virtual storage will be wasted. If defined too small, data truncation will occur. (Check the value of MAXDATA in your NCP GEN for a guideline).

The default is **5K**.

MAXIMUM-USERS=*nnnn*

Specifies the maximum number of users allowed to log on concurrently. Any number from 0 to 9999 may be entered.

MULTOPER=YES|NO

Specify YES to enable the MVS console operator interface. If specified, the MVS STOP (P) and MODIFY (F) commands may be used to monitor and control MULTSESS/HPO from an MVS console.

Specify NO to disable the MVS console operator interface.

The default is **NO**.

MVS/XA=YES|NO

This startup option is shown for backward compatibility purposes only. The option is ignored by MULTSESS/HPO which unconditionally uses 31 bit addressing (above the 16mb line).

YES was used to specify storage above the 16mb line on an MVS/XA system.

NO was used to specify storage below the 16mb line on an MVS/XA system, or a NON-XA system.

NETSPY=YES|NO

Specify YES to provide terminal monitor support with NETSPY.

The default is **NO**.

NIMR-NIM=PROD|TEST

This specifies the target NC-NIM that MULTSESS/HPO will communicate with. The normal entry is PROD. The TEST option is provided to allow a second NC-NIM for testing.

When specified, the startup option can be dynamically enabled/disabled or modified with the SET NIM command. Refer to the chapter entitled *MULTSESS/HPO commands* in the MULTSESS/HPO User Reference Manual.

This startup option corresponds with the NC-NIM startup option NIM-XMS=PROD/TEST.

NPM=YES|NO

Specify YES to start the Network Performance Monitor (NPM). Refer to *Network Performance Monitor* on page 4.16 of the MULTSESS/HPO Customization Reference Manual.

The default is **NO**.

NPMTRACE=YES|NO

Specify YES to start the NPM event trace facility. Refer to *Network Performance Monitor* on page 4.16 of the MULTSESS/HPO Customization Reference Manual.

The default is **NO**.

PANEL=*attribute-characters*

Specifies the special characters recognized as attribute characters when defining a logo or a user menu panel. Specify 5 characters to denote, in turn:

High Intensity,	*Protected.*	(White)
High Intensity,	*Unprotected.*	(Red)
Low Intensity,	*Protected.*	(Blue)
Low Intensity,	*Unprotected.*	(Green)
Non-Display,	*Unprotected.*	

The default value is **PANEL=@+*$%** where:

@	High Intensity,	Protected	(White)
+	High Intensity,	Unprotected.	(Red)
*	Low Intensity,	Protected.	(Blue)
$	Low Intensity,	Unprotected.	(Green)
%	Non-Display,	Unprotected.	

POWER-OFF-DISCONNECT=YES|NO

If YES is specified, MULTSESS/HPO will put the user into DISCONNECT status when a terminal is powered off.

The default is **NO**.

PROMPT=*string*

The parameter *string* is up to 8 characters to be displayed at the bottom right hand corner of the screen when MULTSESS/HPO has more message data to display.

The default is **MORE** ....

RECONNECT-DIFFERENT-TERMTYPE=YES|NO

If YES is specified, users will be able to reconnect on a different terminal type when sessions are active. The default is **NO**

WARNING

Attempting to use existing sessions established with the previous logmode and terminal type could result in errors and a possible hang. It is recommended that this option only be used to allow users to reconnect in order to terminate their existing sessions and start up new sessions.

REMOTE-DISCONNECT=YES|NO

Specify NO to disable the remote disconnect feature. If a userid is entered as part of a logon to a MULTSESS already in use, the new logon is unconditionally disallowed.

Specify YES to enable the remote disconnect feature. If a userid is already in use, the new user is offered the option to disconnect the existing MULTSESS/HPO session, allowing reconnection on the new terminal.

The default is **YES**.

ROUND-ROBIN-LOGOFF=YES|NO

If YES is specified, MULTSESS/HPO will issue a LOGOFF and return the terminal to VTAM when the last session in round-robin mode is terminated with the MSKEY set.

If NO is specified, the MENU will be displayed.

The default is **YES**.

ROUND-ROBIN-SESSEND=MENU

When specified, MULTSESS/HPO will send the MENU when a session is terminated with round-robin in effect and the MSKEY set. If round robin is in effect and MSKEY is not set, the next session is provided (unless it is the last session in the tour).

If this startup option is not present, a terminated session will cause the user to automatically switch to the next round-robin session.

SAC-CLASS=*class*

Only required if the ALERT/SAC proprietary security package is to be used for password validation.

The parameter *class* specifies the SAC class of MULTSESS/HPO to be passed on calls to ALERT/SAC.

The default is **A**.

SAC-PRTY=*nn*

Only required if the ALERT/SAC proprietary security package is to be used for password validation.

The parameter *nn* specifies the SAC priority of MULTSESS/HPO to be passed on calls to ALERT/SAC.

The **default** is **15**.

SEARCH-ALL=YES|NO

If YES is specified, MULTSESS/HPO will look for a session switch character in the first character position of all modified fields, instead of just the first.

The **default** is **NO**.

SEPARATOR=YES|NO|CLEAR

Specifies whether a separator line is required to delimit old and new messages and command responses generated by MULTSESS/HPO.

Specify **YES** to cause a separator to be inserted.

Specify **NO** not to insert a separator.

Specify **CLEAR** to cause the message area to be cleared before new messages are inserted.

The **default** is **NO**.

SESSION-CHARACTER = *char,option*

The parameter *char* specifies the default sesschar (session switch character) for all users. Any keyboard character may be specified.

A character should be chosen which is not in general use with any of the applications with which MULTSESS/HPO is to have sessions.

The parameter *option* may be **KEEP** or **NOKEEP**, to specify if the session switch character should be left on the screen when a user returns to a session.

The **default** is **#,KEEP**. **(# = X'7B')**

The values specified may be changed on a per user basis using the SET SESSCHAR command.

SESSION-LIMIT=*nn*

The parameter *nn* specifies (in K) the maximum amount of data that may be received by MULTSESS on a session that the user is not actively using.

Products like OMEGAMON send interval updates and, if unchecked, waste excessive MULTSESS/HPO storage.

Once *nn* Kbytes have been received the user's session will be terminated.

Specify a numeric value between **0** and **9999**.

A value of **0** means no limit.

The **default** is **0**.

SESSION-RECORD=YES|NO

Specify **YES** to cause MULTSESS/HPO to write a log record to the console file every time a user does a session switch.

Specify **NO** if session switch console file messages are not required.

The **default** is **NO**.

TERMINAL-LOGON=YES|NO

Specify **YES** to allow the terminal logical unit name to be used as the userid when logging on to MULTSESS/HPO. If a user presses enter at the logo panel without typing a userid, the terminal name will be used. Normal directory validation will be done using the terminal as the userid.

Specify **NO** to force entry of a userid.

The **default** is **NO**.

TP-TRACE=YES|NO

Specify **YES** to invoke the MULTSESS VTAM tracing routines.

Tracing of all MULTSESS activity will be invoked as soon as MULTSESS/HPO is started. This will cause considerable overhead and should only be used on advice from your support office.

The trace may be activated while MULTSESS/HPO is active using the TPTRACE command.

The **default** is **NO**.

USER-IDLETIME=*nn*

The parameter *nn* specifies the number of minutes that must elapse without terminal activity before a user is automatically put in disconnect status.

Specify a numeric value in the range **0** to **9999**.

Specifying **0** disables the idle-time feature.

The **default** is **0**.

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Chapter 6 - Defining virtual terminal pools

Note: This chapter describes the parameters necessary to define virtual terminal pools to MULTSESS/HPO.

For details of how and why to use the pooling feature please refer to *Chapter 4 - Virtual Terminals* in the Technical Reference Manual.

Pool definitions

Virtual terminal pool definitions are held in a partitioned dataset member pointed to by the VPOOL DD statement in the JCL used to initiate MULTSESS/HPO. The dataset must be fixed length with a record length of 80 without sequence numbers.

Pool definitions may be amended while MULTSESS/HPO is active and brought into use using the VPOOL command. The use of VPOOLS may be monitored using the DISPLAY VPOOLS command. These commands are described in the User Reference Manual, *Chapter 2 - MULTSESS/HPO commands*.

Any number of virtual terminal pools may be defined. Each pool may include an unlimited number of virtual terminal ACBs.

Optionally a logmode name may be associated with a pool to restrict access to the pool to sessions using the specified logmode.

VPOOL DD statement

The use of virtual terminal pooling is optional. If no VPOOL DD statement is coded, the virtual terminal pooling feature is disabled.

Terminal definitions

Virtual terminal definitions consist of plain-language statements. MULTSESS/HPO will load all pool definitions into storage at startup time in a compressed internal format. No assemblies or preprocessing is required on the part of the user.

Supported statements

The following statements are supported:

VPOOL	-	marks the start of a new virtual terminal pool
	-	assigns a name to the pool
	-	optionally specifies a logmode validation name.
ACBNAMES	-	lists the VTAM APPL ACB names to be included in the pool. The ACBs specified must have previously been defined in SYS1.VTAMLST.

Note: An ACB may occur in more than one pool.

Rules of statement syntax

- all statements must begin in column 1
- each VPOOL statement must be followed by at least one ACBNAMES statement
- only UPPER-CASE characters are allowed
- statements must not extend beyond column 71

VPOOL

Description The VPOOL statement marks the start of a new virtual terminal pool. It assigns a name to the pool and optionally a logmode validation name.

Format

VPOOL POOL*aaaa* *logmode*

where:

POOL*aaaa* assigns a name to this virtual terminal pool. All pool names must begin with the characters POOL.

aaaa may be any combination of up to 4 upper-case characters.

You may assign the same name to more than one pool, provided each pool is assigned a different logmode validation name.

logmode assigns a logmode validation name to the pool. An ACB will only be allocated from this pool if this name matches the logmode used to request the session.

This parameter is optional. If omitted, an ACB may be allocated from this pool regardless of the logmode used for the session.

Plus (+) characters may be coded within the logmode name to indicate character positions to be ignored when matching against the logmode in use for the session. For example:

VPOOL POOL1 ++++++M2

may be used for sessions using any logmode with a name which ends in M2.

Note: Please refer to *Chapter 4 - Virtual Terminals* in the Technical Reference Manual for further details.

ACBNAMES

Description The ACBNAMES statement assigns virtual terminal ACBs to a VTERM pool.

Format

ACBNAMES ***acbname acbname acbname***

where:

acbname specifies the name of a virtual terminal ACB to be included in the pool.

Notes All the specified names must have previously been defined in SYS1.VTAMLST. Refer to *Chapter 2 - VTAM updates* for details of how to do this.

You may code as many acbnames on a single statement as will fit up to and including column 71.

If you require more ACBs in the pool than will fit on a single statement, you may include as many ACBNAMES statements as are needed to define all the required ACBs.

Examples of virtual terminal pools

Example 1

Simple environment.
All terminals are the same model.
One common pool for all users.

VTERM pool definitions

```
VPOOL POOL1
ACBNAMES ACB1 ACB2 ACB3 ...
ACBNAMES ACB120 ACB121 ACB122 ...
```

User's directory entry.

```
USER  *
VTERM  POOL*
SESSION *  POOL*
*
```

Example 2

Mixed environment.
Differing terminal types.
Groups of terminals of different models defined in CICS TCT.

VTERM pool definitions

```
*
* ACBs defined to CICS as 24 x 80.
*
VPOOL POOLC2 S2PN87C7
ACBNAMES ACB21 ACB22 ACB23.....
*
* ACBs defined to CICS as 32 x 80.
*
VPOOL POOLC2 S3AN87C7
ACBNAMES ACB31 ACB32 ACB33.....
*
* ACBs defined to CICS as 43 x 80.
*
VPOOL POOLC2 S4AN87C7
ACBNAMES ACB41 ACB42 ACB43.....
```

User's directory entry.

```
USER*
VTERM POOLC2
SESSION CICS *
```

All pools are called POOLC2.
When a user requests a CICS session, MULTSESS/HPO will allocate an ACB from the POOLC2 that has been defined with a logmode that matches the user's real terminal.

Example 3

Mixed environment.
Differing terminal types.
All IMS TERMINAL definitions are model 2.

VTERM pool definitions

```
*
*  General use pool
*
VPOOL    POOLA1
ACBNAMES  ACB1  ACB2  ACB3....
ACBNAMES  ACB8  ACB9  ACB10....
*
*  Pool for IMS model 2 usage.
*
VPOOL     POOLIMS   S4C32782
ACBNAMES  ACBA  ACBB  ACBC....
ACBNAMES  ACBX  ACBY  ACBZ....
*
*  Repeat of POOLIMS, but without logmode
*  restrictions
*  Only non-IMS sessions will be allowed to use
*  this pool
*
VPOOL     POOLA2
ACBNAMES  ACBA  ACBB  ACBC....
ACBNAMES  ACBX  ACBY  ACBZ....
```

User's directory entry.

```
USER*
VTERM   POOL*
SESSION IMS POOLIMS  S4C32782
SESSION *   POOLA*   *
```

Sessions with IMS may only use VTERMs from POOLIMS.

Since IMS only has model 2s defined to it, POOLIMS will only allocate an ACB for sessions using a model 2 logmode.

The session statement for IMS specifies a model 2 logmode, thus forcing model 2 mode for any terminal type.

Sessions with applications other than IMS may use any pool whose name begins POOLA.

Because POOLA1 occurs first in the VPOOL definitions, sessions other than IMS will try to allocate a VTERM from this pool first.

If unable to allocate an ACB from POOLA1, overflow into POOLA2 is allowed. POOLA2 contains the same ACBNAMEs as POOLIMS. Thus 'stealing' of IMS ACBs is allowed when all other ACBs are exhausted. To prevent overflow and thus always reserve ACBs for use with IMS, remove the definition of POOLA2

Chapter 7 - Creating the ATP/HPO control table

ATP control table

The ATP Control Table is an optional feature for controlling access to ATP script libraries.

The ATP Control Table is a partitioned dataset member pointed to by the ATPDIR DD statement in the JCL used to start MULTSESS.

The ATP Control Table consists of plain-language statements that are loaded into storage in compressed internal format at MULTSESS startup time. No assemblies or other preprocessing is required of the user.

ATPDIR DD statement

Use of this feature is optional. If no ATPDIR DD statement is present, only the ATP public script library is available for use and any user may run any script on any session.

Amending dataset

The dataset may be amended while MULTSESS/HPO is active and the new version brought into use using the ATPDIR command.

Operands

All variable operands except library-id may be specified generically. A generic operand consists of a 'stub' terminated by an asterisk (*). When comparing against generic operands, only the stub is used for matching purposes.

USER

Description The USER statement defines the start of an entry for a user or a group of users. If the terminal logon feature is in use, a USER statement may also specify the start of an entry for a terminal or group of terminals.

Format

```
USER name
```

where:

name specifies the name of a user or terminal to which this entry applies.

A generic name may be specified to indicate a group of users or terminals.

SCRIPT

Description A SCRIPT statement identifies a script or group of scripts that the user is authorized to access. It optionally restricts use of the script(s) to particular applications and defines a private library from which the script will be executed.

Format

SCRIPT *scriptname session-symbolic library-id*

where:

scriptname specifies the name of a script that the user is authorized to access.

A generic name may be specified to authorize access to a group of scripts.

session-symbolic limits the use of *scriptname* to sessions with the specified symbolic name.

A generic name may be specified to authorize use of the script(s) on a group of application sessions.

This parameter is optional. If omitted, the specified script(s) may be used on any application session.

library-id specifies an identifier of a private ATP script library from which the specified script(s) will be executed.

For details of how ATP uses this id to build the script dataset name, refer to the *ATP Installation and Operation* manual.

This parameter is optional. If omitted, or specified as PUBLIC, the scripts will be fetched from the ATP public script library.

Note Multiple SCRIPT statements may be coded for a user to identify all the scripts that he is authorized to access.

Examples of the ATP control table

Example 1
Simple security preventing all users running an IMS script on a TSO session etc.

```
USER TSG*
SCRIPT TSOSCR* TSO*
SCRIPT IMSSCR* IMS*
SCRIPT CICSCR* CICS*
```

Example 2
Restricting access to particular scripts.

```
USER TSG*
SCRIPT * *

USER *
SCRIPT IMS* IMS*
SCRIPT CICS* CICS*
```

TSG users may run any script on any session.

Other users may only run scripts for which they are specifically authorized.

Example 3
Use of private libraries.

```
USER    USER1
SCRIPT  PRIVATE  *  PRIVLIB
SCRIPT  *

USER    *
SCRIPT  *
```

If USER1 requests script PRIVATE, it will be loaded from the private library PRIVLIB. Scripts other than private will be loaded from the public library.

Script requests for all other users will be serviced from the public library.

Chapter 8 - Installation verification

Verification procedure

This section describes an installation verification procedure you may wish to follow to verify that MULTSESS/HPO has been correctly installed and to demonstrate some of the features for this release of MULTSESS/HPO. The procedure is provided in the form of a table (below and on following pages) with each action or command showing the corresponding effect or screen image.

Sample directory of users

The steps described make use of the sample directory of users supplied and assume that the sample startup parameters in member STRTUP27 of the supplied control library are used.

Before running the installation verification procedure

1. Edit the Directory of Users (MSDIRECT) and amend the statement USER CAKT01 to specify the luname of the terminal you will use.
2. Edit the Application Definition Table (MSAPPLS) and specify the nodenames of your applications

Action or command	Effect or screen image
Start MULTSESS	Logo displayed with prompts for userid, password and new password. Also <PFK3> for logoff and PFK1 for help.
Press <Enter> without specifying a userid	Attempts logon with: *userid=terminal-ID* (Terminal name needs to be in user directory).
SET CMDCHAR;	Sets command separator to: (; = field mark hex '1E')
HELP SET;Q NAMES;Q SESS	Inputs multiple command string.
SET PFK1 IMM TERM ALL;;WAIT 5;;LOGOFF	Sets up PF key as multiple command string.
Q PFK1	Shows <PFK1> set as command string.
SET NEWS1 Welcome to MULTSESS	Sets line 1 of the 3 line hot news area
Q NEWS	Looks at hot news.
SET NEWSFILE	Reads hot news from external newsfile (from NCI/XF, for example).
LLOAD LOGONEWS	Updates logo screen with the current hot news and refreshes all screens currently showing the logo.

Action or command	Effect or screen image
LOGOFF	Return to VTAM.
LOGON APPLID(MULTSESS) DATA('LUSER1 USER1')	USER1's profile invokes Dynamic Panel mode. Note that the CINIT data is accepted.
PANEL OFF	No effect - USER1's profile invokes Dynamic Panel mode with the NOEXIT option.
SET EDS OFF	Disables Extended Data Stream for 7 color terminals. No effect on other terminals.
SET EDS ON	Enables Extended Data Stream for 7 color terminals. No effect on other terminals.
Type 1 and hit <Enter>.	Connects to TSO.
Logoff from TSO.	Returns to MULTSESS panel.
DISCONN	Disconnects USER1 and returns to logo screen.
Logon as USER2 (password USER2).	USER2's profile invokes Dynamic Panel mode.
Hit <PFK8>	Scrolls down to applications 11-20.
Hit <PFK7>	Scrolls up to applications 1-10.
Position cursor in PFK field of an application, type 8 and hit <Enter>.	Duplicate PFK setting. An error message is given and the cursor positioned at the duplicate PFK.
Overtype the 8 with spaces and hit <Enter>.	The error is cleared.
PAN ON NOMSG	Turns off error messages.
Type some irrelevant data and hit <Enter>.	No error message displayed.
PAN ON MSG	Error messages now enabled.
Backtab to MSKEY field, overtype with "/" and hit <Enter>.	The MSKEY key (always switches back to MULTSESS) is set to /.
Type 6 in the PFK field of an available application.	<PFK6> is now assigned to that application whilst in Dynamic Panel mode.
Hit <PFK6>.	Session initiated with the application.
Type / and hit <Enter>.	Returns to the Dynamic Panel.
Position cursor on line of above application and hit <Enter>.	Returns to application session.
Set PAK2 into MSKEY field.	MSKEY set to <PAK2>.
Type ID number of above application on command line and hit <Enter>.	Returns to application session.

Action or command	Effect or screen image
Hit <PAK2>.	Returns to Dynamic Panel.
Hit <PAK2> again.	<PAK2> sent to application and application session resumed.
Type T into command field.	Session termination begun.
Press <Enter>.	'ENDED' appears in status field against the application.
Type A into the C column of several applications.	Sessions activated. Status of UPDATED indicated in status field of active applications.
DISCONN	Disconnects USER2, returns to Logo screen.
Logon as USER4 (password USER4).	USER4's profile does not invoke Dynamic Panel mode - remains in Basic mode with PFKs set up as shown.
PAN ON PFK	Invokes Dynamic Panel mode with PFKs already set up.
PAN OFF	Returns to Basic mode, since NOEXIT was not specified on the PAN ON command.
PAN ON NOPFK	Invokes Dynamic Panel mode without PFKs being set up.
DEFINE APPLID27	Reloads ADT with possible changes. Note effect on panel.
Start a session, return to MULTSESS, type 'P' into command area of application you have started and hit <Enter>.	No effect - Print exit not enabled.
EXIT QUERY *	Displays which user exits are enabled.
EXIT ENABLE 4	Enables the print exit, EXIT04. Can be used in conjunction with LOAD command when developing user exits.
PRINT S *alias* (*Use Q SESS to find alias*).	Prints the screen image of session a*lias* to the spool.
MSGAPP TSO* HELLO	Sends a message that will be immediately received by all users with an active session with an application whose name begins 'TSO' (need another user with active TSO* session).
STOP TSO*	Disables access to all applications whose name begins TSO.
START TSO*	Enables access to applications that were disabled by above STOP command.
STOP TSO* FORCE	As STOP above but forces off active users.

Action or command	Effect or screen image
Q A	Similar to Q N but shorter.
Q TERM	Gives two line message giving terminal information.
Q USER2 *	Gives information on available sessions of USER2.
ATPVAR QUERY * (*ATP users only*)	Lists all ATP variables.
ATPVAR SET &var value (*ATP users only*)	Sets up an ATP variable before running an ATP script.
ATPVAR DELETE &var (*ATP users only*)	Deletes an ATP variable.
DISC	Disconnects USER4 and returns to logo screen.
Logon as USER3 (password USER3)	USER3's profile invokes a sample user panel.
HIT <PFK4>	Disconnects USER3 and returns to logo screen.
Logon as USER5 (password USER5).	Users profile invokes a Dynamic Panel mode with PFKs preset using the PANEL PFKSET command.
Try to overtype a PFK setting.	PFKs cannot be updated because NOUPDATE option in force.
PROFILE LIST	Shows PANEL PFKSET and PANEL ON NOUPDATE commands in profile. Also other PFK settings.
Hit <PFK24> (if available)	MORE command displays message buffer area.
Hit <Enter>	Returns to Dynamic Panel.
DISC	Disconnects and returns to logo.

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